Board of Studies in Geology

FACULTY OF SCIENCE

GONDWANA UNIVERSITY, GADCHIROLI

Syllabus of

B.Sc. Third Year (Semester Pattern)

SUBJECT - GEOLOGY

Semester VI
Semester VI
Geology Paper I
(Structural Geology)

Unit I

Unit II

Unit III

Unit IV

Books recommended:
5. Park: Fundamentals of Structural Geology.
10. Lahi: Field Geology.
16. Bolton: Geological Maps: Their solution and interpretation
Paper II
(Elementary Hydrogeology and Environmental Geology)

Unit I

Unit II
Hydrologic properties of rocks. Hydrogeologic characteristics of different types of rocks. Aquifers and their classification. Groundwater provinces of India. Groundwater conditions in different parts of Maharashtra. Concept of watershed management.

Unit III
Definition and concept of Environmental Geology. Natural hazards such as earthquakes, landslides, floods, volcanic activity, coastal erosion, desertification and their impact on environment. Soil types, soil degradation and mitigation, soil pollution.

Unit IV
Concepts of natural ecosystems on the earth and their mutual interrelations and interactions (atmosphere, hydrosphere, lithosphere and biosphere). Environmental changes due to human dominated environment over nature dominated system. Environmental considerations in the constructions of large dams, reservoirs, and tunnels. Pollution: its effect on natural ecosystem and anti-pollutional measures (water and air)

Books recommended:
Hydrogeology:
1. Todd: Ground water Hydrology
2. Karanth: Hydrogeology
3. Nagabhushaniah: Groundwater in Hydrosphere (Groundwater hydrology)
4. Karanth: Groundwater Assessment, Development and Management

Environmental Geology:
1. Valdiya: Environmental Geology
2. Miller: Sustaining the Earth
3. Foley, Duncan, McKenzie and Utgard: Investigations in Environmental Geology
4. Keller: Environmental Geology
5. Bell: Geological Hazards.
6. Coats: Environmental Geology

Practicals:
Structural Geology:
Reading a geological map and the symbols used. Exercises on geological maps showing bedding, unconformities, folds, faults and intrusive. Completion of outcrop maps (minimum of 15 maps). Problems based on true dip and apparent dip, three point problems, and determination of thickness and depth of the beds. Stereographic projections of structural data. Drawing of geological sections and interpretation of geology and geological history (10 to 15 maps)
**Field work:**

Field work shall be treated as a part of practical examination of semester VI and Marks are assigned on it. Every student should attend field work for a short duration and submit field diary, geological specimen and a report. Field report shall be assessed by teacher and Head of the Department.